

# **ITS Field Operational Test Summary**

## **Anaheim Advanced Traffic Control System**

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### **Introduction**

The Anaheim Advanced Traffic Control ITS Field Operational Test is evaluating two advanced technologies. One technology is a low-cost video traffic detection system (VTDS); the other is an adaptive traffic signal control system, known as the Split Cycle Offset Optimization Technique (SCOOT). SCOOT was originally developed and marketed outside the US. The test has two purposes:

- Explore the issues associated with using above ground sensor technology, as an alternative to traditional induction loop detectors
- Assess the technical and performance issues related to using SCOOT in a US city.

The test took place in the City of Anaheim, in Orange County, California. The data collection for the VTDS component occurred in December 1996; data collection for the SCOOT component occurred in Fall 1997. A Final Report is expected in March 1998.

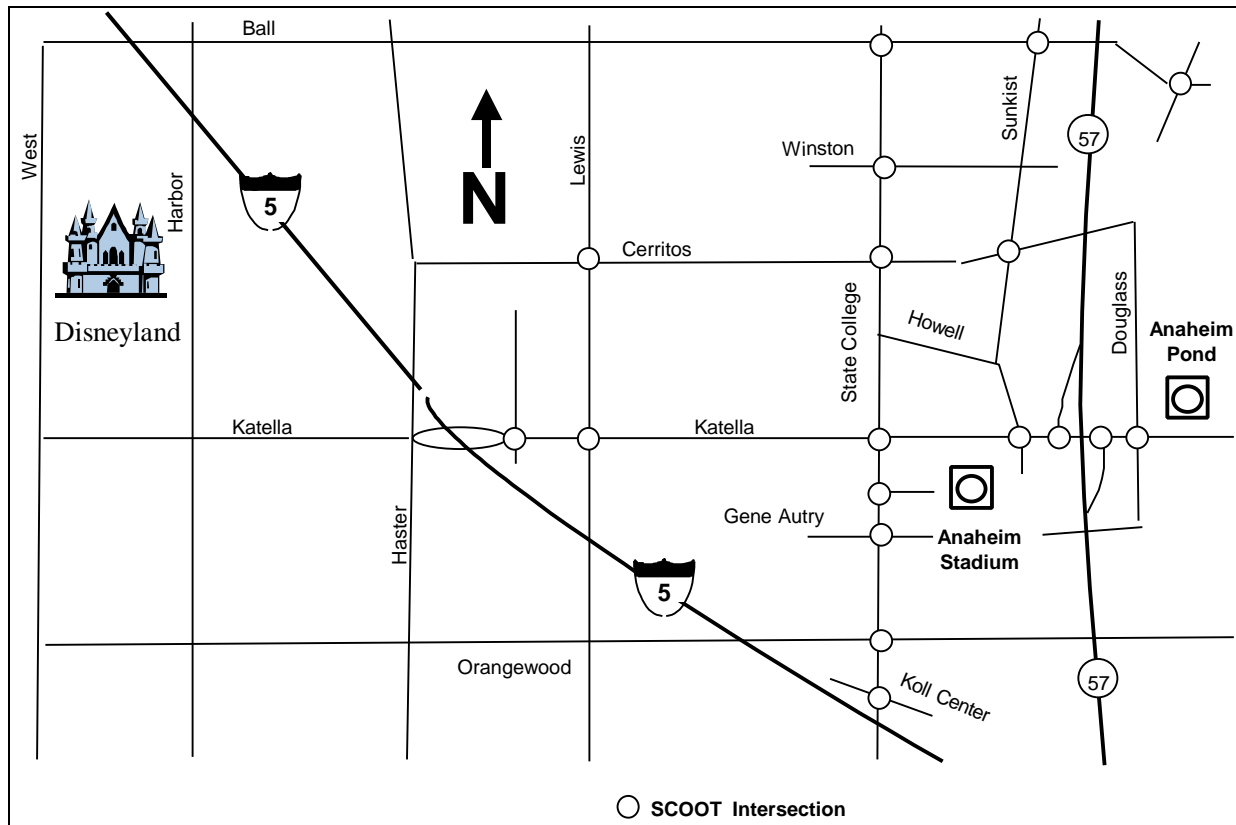
### **Project Description**

The two technologies evaluated by this test were tested separately.

The VTDS component of the test provided an alternative means of vehicle and phase detection at traffic signal controlled intersections. The VTDS employs a video camera to observe traffic approaching and stopped at an intersection. Such a system avoids the installation and maintenance issues related to inductive loops embedded in the roadway. In addition, the VTDS offers the potential for increased surveillance coverage. The VTDS also allows more flexibility in changing the location of the video vehicle sensors at an intersection. Using the VTDS, a single camera, mounted in an overhead position (for example, on a cantilever signal support arm) can cover an intersection approach. Each camera can accommodate up to four traffic lanes. The test assessed the performance of the VTDS under a range of traffic, lighting, weather, and installation scenarios, by comparing VTDS vehicle presence outputs against manual observations. The VTDS did not replace the loop detectors for the purposes of this test.

The SCOOT component of the test consists of a deployment of SCOOT at 18 existing signal controlled intersections. Intersections to be included are principally on Katella Avenue, east of I-5. Figure 1 shows the SCOOT component test area. The test area includes the Anaheim Stadium (football) and the Anaheim Pond (ice hockey, concerts). The evaluation compared traffic conditions, before and after implementation of SCOOT during the afternoon peak, and evenings, for event and non-event days. Adaptive traffic control offers the potential for reduced traffic congestion and smoother traffic flow, by predicting when 'platoons' of traffic from one intersection will arrive at the next intersection downstream. During the intervening period, priority can be given to traffic on cross streets. SCOOT requires modifications to, but not

replacement of, existing controllers. As part of the evaluation, test personnel will assess issues such as compatibility with existing controllers and loop detectors, and ease of installation.



**Figure 1: SCOOT Component Test Area**

### Test Status

Data collection was completed during December 1996 (VTDS) and October/November 1997 (SCOOT). The VTDS is not currently in use (it was tested off-line from intersection control). SCOOT remains operational for the 18 intersections involved in the test. The final report is due in March 1998. No interim results are available.

### Test Partners

City of Anaheim  
 California Department of Transportation  
 Federal Highway Administration  
 Odetics (VTDS)  
 Transcore

### References

None published.